PART I - ADMINISTRATIVE

Section 1. General administrative information

Title of project

Protect And Enhance Anadromous Fish Habitat In The John Day Subbasin

BPA project number: 8402100
Contract renewal date (mm/yyyy): 3/2000 ☐ **Multiple actions?**

Business name of agency, institution or organization requesting funding
Oregon Department of Fish & Wildlife

Business acronym (if appropriate) ODFW

Proposal contact person or principal investigator:

Name	Tim Bailey
Mailing Address	73471 Mytinger Lane
City, ST Zip	Pnedleton, OR 97801
Phone	(541) 276-2344
Fax	(541) 276-2344
Email address	umatfish@oregontrail.net

NPPC Program Measure Number(s) which this project addresses
2.1, 7.6A.2, 7.6B.1, 7.6B.3, 7.6B.4, 7.6B.5, 7.6B.6, 7.6C, 7.6D, 7.7, 7.8D.1, 7.8E.1, 7.10

FWS/NMFS Biological Opinion Number(s) which this project addresses
N/A

Other planning document references
"Integrated System Plan for Salmon and Steelhead Production in the Columbia River Basin", CBFWA 1990. "John Day River Basin : Recommended Salmon and Steelhead Habitat Improvenent Measures", CTUIR 1984. "John Day River Basin Fish Habitat Improvement Implementation Plan", ODFW 1987. "Oregon Dept. of Fish and Wildlife, Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of the Warm Springs Indian Reservation", 1990, John Day River Subbasin Salmon and Steelhead Production Plan. "County Court for the State of Oregon for Grant County", 1992 Decision and Order # 92-22: Riparian Management Policy. "Bureau of Reclaimation, 1990, Upper John Day River Basin Master Water Plan Working Paper." "Malheur National Forest, 1990, Land and Resource Management Plan." "Oregon Water Resources Dept., May 1992, Stream Restoration Program for the Upper Mainstem Subbasin of the John Day River." "Oregon Water Resources Dept., May 1991, Stream Restoration Program for the Middle F

Short description
Establish long term riparian, fish habitat and tributary passage improvement on private lands within the John Day Subbasin.

Target species
Spring Chinook and Summer Steelhead

Section 2. Sorting and evaluation

Subbasin
John Day

Evaluation Process Sort

CBFWA caucus	Special evaluation process	ISRP project type
Mark one or more caucus	If your project fits either of these processes, mark one or both	Mark one or more categories
☒ Anadromous fish ☐ Resident fish ☐ Wildlife	☒ Multi-year (milestone-based evaluation) ☒ Watershed project evaluation	☐ Watershed councils/model watersheds ☐ Information dissemination ☒ Operation & maintenance ☐ New construction ☐ Research & monitoring ☒ Implementation & management ☐ Wildlife habitat acquisitions

Section 3. Relationships to other Bonneville projects

Umbrella / sub-proposal relationships. List umbrella project first.

Project #	Project title/description

Other dependent or critically-related projects

Project #	Project title/description	Nature of relationship
8402500	Protect And Enhance Anadromous Fish Habitat In Grande Ronde Basin Streams	Shares funding and personnel to implement and maintain projects on Camas Creek.

Section 4. Objectives, tasks and schedules

Past accomplishments

Year	Accomplishment	Met biological objectives?
1998	Constructed 132 miles of riparian livestock exclosure fencing protecting 72 miles of stream and 1,512 acres of riparian habitat. Planted 7,450 riparian trees or shrubs, and installed 3,040 instream structures.	Many miles of stream remain to be treated.

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Restore riparian vegetation species diversity and community structure so the positive interaction of the stream, riparian zone and floodplain perpetuate and maintain normative ecological and physical processes.	a	Prepare and obtain landowner lease agreements for FY 2000 work.
1		b	Walk streams to identify work areas, plan work, layout and mark specific sites where riparian fencing, water developments and plantings will be implemented.
1		c	Develop construction schedules, engineer project specifications, advertise for construction bids, select contractors and obtain permits for implementation activities.
1		d	Purchase construction materials and supplies necessary to construct planned habitat improvements.
1		e	Construct 4.5 miles of fence on Long Creek, and 13 miles of fence on Bear Creek to allow the restoration and protection of riparian vegetation and instream habitat.
1		f	Construct offsite water developments to remove livestock pressure from riparian fences and encourage livestock to use upland pastures.
1		g	Restore riparian vegetation by seeding grasses in areas disturbed during construction and planting native trees and shrubs where necessary.
2	Improve instream habitat diversity by constructing instream structures and placing large wood.	a	Prepare and obtain landowner lease agreements for FY 2000 work.
2		b	Survey/assess streams to identify work areas, plan work, layout and mark specific sites where bank stabilization and instream structures will be implemented.
2		c	Develop construction schedules, engineer project specifications, advertise for construction bids, select contractors and obtain permits for implementation activities.
2		d	Purchase construction materials and supplies necessary to construct planned habitat improvements.
2		e	Construct instream fish habitat and streambank stabilization structures determined during prework assessment on Long and Bear creeks.
3	Maintain exsitng riparian exclosure fences, vegetative plantings, and instream structures to insure that project benefits persist along 66 stream miles	a	Inspect instream fish habitat structures on 66 miles of treated stream reaches. Assess maintenance needs following spring runoff and perform necessary repairs if funds are

	and 1512 acres of protected riparian habitat.		provided by BPA.
3		b	Inspect and maintain 132 miles of riparian protection fences.
3		c	Inspect and maintain 157 project livestock watering sites. Maintenance shall include installation of all watergaps in the spring and removal of all watergaps in the fall.
3		d	Inspect and maintain 1512 acres of project vegetation plantings and seedings. Perform noxious weed control measures where necessary.
3		e	Inspect and maintain three fish passage structures before spring steelhead migrations.
4	Monitor and evaluate fish habitat improvement projects to determine if project goals and objectives are being met.	a	Take 181 photopoint pictures at selected sites and compare to previous years to document stream channel condition and riparian recovery.
4		b	Install eight thermogrpaphs to document stream temperature changes resulting from habitat treatment measures.
4		c	Measure stream cross section transects previously established at 20 sites on the Mainstem and 20 sites on Fox Creek and compare to previous years to document changes in stream width, depth and profile.
4		d	Count chinook redds on 12 miles of the Mainstem and steelhead redds on 3 miles of Fox Creek and 2 miles of Fivemile Creek. Compare counts to previous years to document anadromous fish population increases in these treated streams.
4		e	Count nesting species of neotropical songbirds and compare to previous years on one mile of the Mainstem and one mile of Fox Creek to document their use of recovering riparian vegetation.
4		f	Summarize, tabulate and graph data from photoghaphs, thermographs, cross section transects, redd counts and songbird species counts. Evaluate results and prepare explainations of how habitat treatment measures have affected the results.
5	Coordinate with and educate landowners and agencies regarding project activities to gain maximum benefit.	a	Coordinate habitat enhancement efforts other agencies (ie. USFS, NRCS, OWRD, DSL, GSWCD, CTUIR, CTWSIR), organizations (ie. Nature Conservancy) and fish habitat programs to insure maximum technology transfer and program consistancy.
5		b	Make presentations to other agencies, private organizations, school /youth education groups and the news media to publicize project accomplishments.

5		c	Work cooperatively with private landowners to promote, and assist with, management activities beneficial to the protection and restoration of riparian areas and watersheds on their lands.
5		d	Prepare and distribute quarterly and annual reports of project constructon, monitoring, coordination and education accomplishments.

Objective schedules and costs

Obj #	Start date mm/yyyy	End date mm/yyyy	Measureable biological objective(s)	Milestone	FY2000 Cost %
1	6/2000	10/2000			40.00%
2	7/2000	9/2000			10.00%
3	3/2000	2/2001			35.00%
4	5/2000	11/2000			10.00%
5	3/2000	2/2001			5.00%
				Total	100.00%

Schedule constraints
Catastrophic natural events such as floods, windstorms or extreme fire danger

Completion date
2017

Section 5. Budget

FY99 project budget (BPA obligated):

FY2000 budget by line item

Item	Note	% of total	FY2000
Personnel	2 FTE's, 1 Temp	%23	99,200
Fringe benefits	38% of Personnel amount	%9	37,696
Supplies, materials, non-expendable property	Fence materials, instream materials, field supplies	%15	62,500
Operations & maintenance	This is for supplies and materials only.	%4	18,000
Capital acquisitions or improvements (e.g. land, buildings, major equip.)	Solar water pumps, chainsaw, replace an all terrain vehicle	%3	12,000
NEPA costs		%0	
Construction-related support		%0	
PIT tags	# of tags:	%0	
Travel		%4	17,000
Indirect costs	35.5 % of Personnel, Fringe, O & M and travel	%21	87,470
Subcontractor	Fence and instream construction	%22	92,180
Other		%0	

TOTAL BPA FY2000 BUDGET REQUEST	$426,046

Cost sharing

Organization	Item or service provided	% total project cost (incl. BPA)	Amount ($)
		%0	
		%0	
		%0	
		%0	
		Total project cost (including BPA portion)	$426,046

Outyear costs

	FY2001	FY02	FY03	FY04
Total budget	$440,000	$455,000	$470,000	$485,000

Section 6. References

Watershed?	Reference
☐	Beschta, R. L., Platts, W.S., and B. Kaufman. 1991. Field review of fish habitat improvement projects in the Grande Ronde and John Day River basins of eastern Oregon.
☐	Bilby, R. E., and G. E. Likens. 1980. Importance of organic debris dams in the structure and function of stream ecosystems. Ecology 61(5): 1107-1113.
☐	Bisson, P.A., B.E. Bilby, M. Bryant, C. Dollof, G. Grette, R. House, M. Murphy, K. Koski, and J. Sedell. 1987. Large woody debirs in forested streams in the Pacific Northwest. In Cundy, T; Salo, E., eds. Proceedings of a symposium streamside management -
☐	Bjornn, T.C., and D.W. Reiser. 1991. Habitat requirements of salmonids in streams. W.R. Mehan ed., Influences of Forest and Rangeland Mangement on Salmonid Fishes and Their Habitats. American Fisheries Society Special Publication 19: 83-138.
☐	Chaney E., Elmore W., Platts W. 1993. Managing change: livestock grazing on western riparian areas. Northwest Resource Information Center, Inc. Eagle, Idaho.
☐	CTUIR (Confederated Tribes of the Umatilla Indian Reservation). 1984. Recommended salmon and steelhead improvement measures for the John Day River basin. Pendleton, Oregon.
☐	Cummins, K. W., G. W. Minshall, J. R. Sedell, C. E. Cushing and R. C. Peterson. 1984. Stream ecosystem theory. Verh. Internat. Verein. Limnol. 22: 1818-1827.
☐	Elmore, W., and R. L. Beschta. 1987. Riparian areas: perceptions in management. Rangelands 9(6): 250-265.
☐	House, R. A. and P. L. Boehne. 1985. Evaluation of instream enhancement structures for salmonid spawning and rearing in a coastal Oregon stream. N. Amer. J. Fish. Mgmt. 5: 283-295.
☐	Independent Scientific Group. 1996. Return to the River: Restoration of Salmonid Fishes in the Columbia River Ecosystem.
☐	Keller E.A., and F. J. Swanson. 1979. Effects of large organic material on channel form and fluvial processes. Earth Surface Processes vol. 4: 361-380.
☐	Lindsay R. B., W. J. Knox, M.W. Flesher, B.J. Smith, E.A. Olson, and L.S. Lutz. 1985. Study of wild spring chinook salmon in the John Day River system. U.S. Dept of Energy, Bonneville Power Administration, Division of Fish and Wildlife. DOE/BP-39
☐	Meehan, W. R., and W. S. Platts. 1978. Livestock grazing and the aquatic environment. Journal of Soil and Water Conservation 33:274-278.

☐	Meehan, W.R., editor. 1991. Influences of Forest and Rangeland Management on Salmonid Fishes and their Habitats. American Fisheries Society Special Publication 19.
☐	Neal, J.A., Jerome, J. 1996. John Day fish habitat improvement project annual report. Oregon Department of Fish and Wildlife. Portland , Oregon.
☐	NMFS. 1997. Snake River Salmon Recovery Plan. August 1997 Draft.
☐	NPPC. 1994. Columbia River Basin Fish and Wildlife Program. Portland, OR.
☐	OWRD (Oregon Water Resources Department). 1992. Stream restoration program for the John Day River subbasin. Salem, Oregon.
☐	Oregon Department of Fish and Wildlife, Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of the Warm Springs Indian Reservation, 1990, John Day River Subbasin Salmon and Steelhead Production Plan, Portland Oregon.
☐	Platts, W. S. 1991. Livestock grazing. W.R. Meehan ed., Influences of Forest and Rangeland Mangement on Salmonid Fishes and Their Habitats. American Fisheries Society
☐	Platts, 1990. Managing fisheries and wildlife on rangelands grazed by livestock. Nevada Department of Fish and Wildlife.
☐	Reeves, G.H., J. D. Hall, T. D. Roelofs, T. L. Hickman, and C. O. Baker. 1991. Rehabilitating and modifying stream habitats. W.R. Meehan ed., Influences of Forest and Rangeland Mangement on Salmonid Fishes and Their Habitats. American Fisheries Society
☐	Reeves, G. H., D. B. Hohler, B. E. Hansen, F. H. Everest, J.R. Sedell, T. L. Hickman, and D. Shively. 1996. Fish habitat restoration in the pacific northwest: Fish Creek of Oregon. Pages 335-358 in J. E. Williams, C. A. Wood, and M. P. Dombeck
☐	Rhoades, McCullough and Espinoza. 1994. A coarse screening process for evaluation of the effects of land management activities on salmon spawning and rearing habitat. Columbia River Inter-Tribal Fish Commission Technical Report.
☐	Roper, B. R., D. Konnof, D. Heller and K. Wieman. 1998. Durability of pacific northwest instream structures following floods. North Amer. J. Fish. Mgmt. 18:686-693.
☐	Rosgen, D.R., 1996 Applied river morphology. Wildland Hydrology, Pagosa Springs, Colorado.
☐	Sedell, J.R., P.A. Bisson, F. J. Swanson, and S.V. Gregory. 1988. What we know about large trees that fall into streams and rivers. U.S. Forest Service General Technical Report PNW-GTR-229:47-81.
☐	Soloazzi, M. F., J. D. Rodgers, and S. L. Johnson. 1992. Annaul Progress Report. Oregon Department of Fish and Wildlife. Portland, OR.
☐	Stuart, A., Lacy, M., Williams, S. 1987. John Day River Fish Habitat Project Implementation Plan. Oregon Dapartment of Fish and Wildlife. John Day, Oregon.
☐	White, R. J. 1975. In-stream management for wild trout. Pages 48-58 in W. King ed. Proceedings, wild trout management symposium. Trout Unlimited, Vienna, Virginia.

PART II - NARRATIVE

Section 7. Abstract

The ***"John Day Basin Fish Habitat Enhancement Project"*** develops and constructs riparian fencing and instream structures to protect, enhance, and restore riparian and instream habitat for anadromous salmonids to improve natural fish production. This project implements Program Measures 7.6, 7.7, 7.8 and 7.10 of the Columbia River Basin Fish and Wildlife Program. These measures call for coordinated efforts to protect and improve spawning and rearing habitat, improve fish passage, and provide offsite mitigation for mainstem fishery losses caused by the Columbia River hydroelectric system. Accomplishing this goal will partially mitigate these losses.

Initiated by the Oregon Department of Fish and Wildlife (ODFW) in 1984, this project protects habitat on private lands in selected tributaries, through long term lease agreements. Primary techniques include passive regeneration of habitat, using riparian exclosure fencing to restore streams to a normative condition. Active remediation using plantings, off-site water developments, and site-specific instream structures are also used where applicable.

Individual projects contribute to ecosystem and basin-wide watershed restoration efforts that are underway by state, federal and tribal agencies and local watershed groups. While the focus of this project is on spring chinook and summer steelhead, resident fishes and many species of wildlife also benefit. Long term maintenance is an ongoing and vital element of this program, and a monitoring program has been in place that includes: stream temperatures, habitat transects, physical and biological surveys, and photopoints.

In FY 2000 we propose to treat 8.4 miles of stream including 6.3 miles of Bear Creek and 2.1 miles of Long Creek. Both stream segments will be fenced to exlude domestic livestock.

Section 8. Project description

a. Technical and/or scientific background

The John Day River originates on the West slope of the Blue Mountains in East-Central Oregon. It flows from four major forks in a northwesterly direction to enter the Columbia at River Mile (RM) 218. It drains 8,010 square miles and is the third largest drainage in the state of Oregon. Primary uses of the basin are ranching, farming, logging, recreation and mining. Native populations of spring Chinook salmon, summer steelhead, redband trout, westslope cutthroat trout and bull trout remain intact today.

While stocks of summer steelhead and spring chinook are now significantly lower in abundance than they were historically, these populations remain resilient to environmental change. Numbers of spring chinook prior to European settlement are believed to have approached 30,000 returning adults, however numbers in recent history have ranged from a low of less than 400 to a high of 4,600 (John Day Subbasin Umbrella). Summer steelhead numbers in recent years have ranged from a low of approximately 4,000 adults to a high of 36,000. Although recent trends in summer steelhead abundance indicate that the status of this population is becoming more critical.

The primary in-basin cause for the decline in abundance of summer steelhead and spring chinook is the degradation of habitat by livestock grazing (CTUIR 1984). The suspension of grazing has the greatest promise of any restoration measure for attaining rapid improvement in habitat conditions and salmon survival (Rhoades et al. 1994). In 1984 the Confederated Tribes of the Umatilla Indian Reservation (CTUIR 1984) identified 542 miles of degraded stream habitat on private lands within the John Day subbasin in need of habitat restoration. The lack of vegetation has resulted in high summer water temperatures, excessive ice formation in the winter, accelerated streambank erosion, excessive sedimentation, depressed beaver populations and reduced instream organic debris. The basin's ability to repair itself is limited by a semiarid environment and the cattle grazing strategies presently in use.

One hundred sixteen John Day subbasin streams/segments are listed on the Oregon Department of environmental qualities list of water quality impaired water bodies (303 (d) list). One hundred seven of these reaches exceed the statewide water quality standard for salmonid fish rearing of 64° F. Of the reaches exceeding 64° F, 18 are listed for "habitat modification".

Hatchery supplementation has been dismissed as an option for increasing salmon and steelhead numbers in the subbasin (Stuart et al. 1987). The John Day is unique in that it is one of the few subbasins in the Columbia to not have been supplemented by with the release of hatchery reared smolts. Habitat improvement, fish passage improvement and irrigation system improvement is presently the only options for increasing fish populations (Lindsay et al. 1985).

Three watershed assessments have been written which document restoration needs for private lands within the John Day subbasin (CTUIR 1984; Stuart et al. 1987; OWRD 1992). The development of these plans involved a comprehensive habitat survey of all known anadromous fish production streams. From these surveys and existing information, habitat limiting factors were developed and used as the basis for determining where habitat improvement work was needed. A prioritized list of streams was then created based on species present, habitat condition, cost effectiveness and logistical constraints (accessibility, technical feasibility, etc.). Project implementation began on the highest priority streams and continues based on this approach. New information gained on the knowledge of fish populations; restoration techniques, etc. are incorporated into this on-going approach.

The intent of the ***"John Day Subbasin Fish Habitat Enhancement Project"*** is to provide offsite mitigation for mainstem losses of habitat and fish productivity caused by the construction and operation of eight dams on the Columbia River, and is to be achieved through coordinated efforts to protect and improve spawning and rearing habitat, and improve fish passage (NPPC 1994). The project mitigates for mainstem losses by improving production of spring chinook salmon and summer steelhead returning to the John Day subbasin. Meeting of biological objectives for these species in the John Day subbasin will contribute towards the Northwest Power Planning Council's interim Goal of doubling salmon and steelhead runs in the Columbia River Basin. Encouraging recovery of riparian vegetation, improving stream bank stability and instream habitat diversity will result in overall increase in water quality and quantity within the John Day sub basin. These habitat improvements will result in an increase in salmonid natural production carrying capacity within the system (Meehan 1991).

Protecting riparian areas from livestock grazing (15 years minimum), fish habitat attributes will become more and more pronounced in time by allowing plants inside the fenced areas to succeed toward climax communities. Fenced areas will continue to produce these attributes until fence maintenance ceases. Landowners must be shown what benefits have occurred so maintenance will continue after protective leases expire. Landowners have constructed their own fences or taken over maintenance duties on project fences in several locations. Removal or modification of fish passage barriers will also improve adult and juvenile salmonid access to preferred habitats.

The foremost objective of this project is to address the impacts to riparian vegetation communities and fisheries habitat caused by the inappropriate management of domestic livestock. The preferred method of addressing this problem is by excluding domestic livestock from riparian zones by constructing exclosure fences. Other types of fish habitat improvements such as instream structures and large wood debris (LWD) placement are implemented after grazing problems are addressed if such problems exist on a treatment reach. Because the riparian zone is the primary control of biotic factors within the stream environment, there is an inseparable link between them (Cummins et al. 1984). The negative effects of livestock grazing on the structure and function of riparian communities and aquatic habitats is well documented (Elmore and Beschta 1987; Meehan and Platts 1978; Platts 1991; Chaney et al. 1993). The most widespread factor affecting riparian communities and fish habitat in northeastern Oregon is the inappropriate management of grazing livestock. Passive regeneration techniques using riparian exclosure

fencing to exclude livestock from riparian zones is the primary method used to restore degraded habitat, and has proven to be an effective means of improving riverine/riparian habitats along grazed streams (Chaney et al. 1993; Platts 1990; NMFS 1997). In a field review of BPA projects Beschta et al. (1991) stated that "Corridor fencing resulted in the most successful examples observed of vegetation recovery, diversity of channel morphology, and improved fish and wildlife habitat." Active remediation techniques using plantings (Chaney et al. 1993; ISG 1996), bioengineered, or other instream structures may also improve habitat, and may be required when natural processes are dysfunctional or unlikely to result in recovery within a desired time frame (NMFS 1997).

Riparian corridor fencing to exclude livestock accomplishes both protection and enhancement of riparian communities. Fencing provides the tool for natural vegetation restoration, and protects the riparian zone from further impacts from livestock. Protection of habitat is by far the most productive method of maintaining quality fish habitat (Reeves et al. 1991).

Site specific instream structures and/or LWD placements are installed as a secondary treatment approach where instream habitat diversity is a limiting factor. Our intent is to provide needed instream cover in treatment reaches lacking such in order to provide some immediate instream benefit. Riparian recovery will eventually perpetuate the habitat characteristic for which the naturally functioning stream is capable. Roper et al. (1998) supports this approach of treating instream needs as a secondary treatment while riparian and watershed problems are being addressed.

It is well documented that large wood debris is a key component of quality fish habitat (Bisson et al. 1987), greatly influences the structure and function of stream ecosystems (Sedell et al. 1988; Bilby and Likens 1980), and greatly influences stream channel form and fluvial processes (Keller and Swanson 1979)

The addition of structures or large boulders to create pools or cover can increase fish populations in cases where these attributes are lacking (Bjornn and Reiser 1991). House and Boehne (1985) found that the installation of instream structures into the altered habitats of the East Fork Lobster Creek, Oregon led to increased spawning and rearing use by coho salmon and steelhead at the improvement sites. Solazzi et al. (1992) found that instream habitat improvements including the installation of channel spanning log structures to create dammed pools and alcoves led to a significant increase in overwinter survival of coho salmon in Lobster Creek, Oregon. Reeves et al. (1996) observed an apparent increase in 1+ age steelhead (although not statistically significant) in Fish Creek, Oregon after the installation of instream structures. Two one hundred-year storm events hit the watershed in 1995 and 1996 that led to the loss of 50% of the structures installed. However, post event surveys indicated that overall changes in habitat types were moderate. The authors suggested that the instream structures played a role in maintaining the habitat.

Reeves et al 1991 provides an overview of management evaluations of several habitat modification projects in the Midwestern and eastern North America by measurements of trout abundance as adapted from White (1975). Of the 11 studies summarized, 10 showed increased abundance/biomass of trout ranging from increases of 10-15% to 400-500%.

Measures in the form of preproject evaluation will be made to determine if instream structure placement is appropriate, and if so, what the most appropriate treatment types are. Rosgen (1996) describes an assessment process for determining the stable channel form of a subject stream. This assessment process includes comparing a series of measurements between an unstable treatment

stream and a stream reach of similar classification in a stable condition. The author indicates that the use of such an assessment process, and implementation based on the assessment results, will lead to a high success rate of applying improvements for fish enhancement. Altering the natural stable channel forms through the installation of fish habitat improvements or the installation of these improvements into unnaturally unstable stream channels is inappropriate.

b. Rationale and significance to Regional Programs

Habitat degradation, caused by overgrazing, road construction, timber harvest and other management activities has adversely affected instream and riparian areas and their effective hydrologic function. Low summer stream flows, high summer water temperatures, poor bank stability, winter icing, sedimentation, and a lack of instream and riparian habitat diversity has occurred, affecting salmonids throughout much of the John Day subbasin (Stuart et al. 1987). Degradation of riparian areas and their effective hydrologic function has contributed significantly to these flow/temperature problems (ODFW, CTUIR, CTWSIR 1990). Degraded stream habitat conditions were identified in 542 miles of streams on private lands within the John Day subbasin (CTUIR 1984).

Habitat improvements implemented under this program will result in the following benefits: 1) increased water table saturation zones and in-stream flow levels during summer months, 2) slower water velocities and narrower stream channels, 3) more diverse riparian vegetation communities to stabilize streambanks, 4) provide recruitable wood for instream cover, 5) increase shading, 6) increase insect drop, 7) increase beaver use and 8) filter sediments. These combined benefits will aid anadromous salmonids by improving overall water quality, increasing and diversifying fisheries habitat and increasing potential food sources.

The project establishes long term riparian, fish habitat and tributary passage improvements on private lands through riparian leases, cooperative agreements and easements of 15 years in length. Individual projects contribute to ecosystem and basin wide watershed restoration and management efforts underway by state, federal and tribal agencies (Stuart et al. 1987). The project provides off-site mitigation for mainstem fisheries losses caused by the Columbia River hydroelectric dams. The project goal is to rehabilitate and improve anadromous fish spawning and rearing habitat as outlined in program measure 7.6 of the Fish and Wildlife Program (FWP, NPPC 1994). This project is an integral part of meeting biological objectives for spring chinook and summer steelhead in the John Day subbasin. Planning for project implementation is coordinated on a comprehensive watershed basis that includes the participation of private landowners, state and federal agencies, tribes and watershed councils as called for in measure 7.6 and 7.7 of the 1994 FWP. Individual projects also incorporate “Best Management Practices” as outlined in measure 7.8B of the FWP; riparian easements with private landowners as specified in Program Measure 7.8E; and fish passage is established or improved as outlined in measure 7.10 of the FWP. Restoration of riparian vegetation to restore normative ecological processes clearly supports the Fish and Wildlife Program goal of a healthy Columbia Basin. These projects contribute to the Northwest Power Planning Council’s interim goal of doubling anadromous fish runs in the Columbia River Basin by providing offsite mitigation for mainstem fisheries losses caused by the eight dams along the Columbia River hydroelectric system.

This habitat restoration project is a necessary measure to accomplish natural production goals as outlined in the John Day Subbasin Salmon and Steelhead Production Plan. Failure to implement the proposed projects and to maintain the existing projects will significantly hinder the recovery efforts on one of the last rivers in the Columbia River Basin that has not been supplemented with hatchery fish. The degradation of habitat, as described above, is currently the only in-basin tool

for increasing productivity to meet biological objectives set for the basin. Ceasing implementation of habitat improvement projects will halt recovery of the spring chinook and summer steelhead populations in the John Day subbasin. Failure to meet biological objectives in the John Day subbasin will impact the Northwest Power Planning Council in realizing its interim goal of doubling anadromous fish runs in the Columbia River basin by providing offsite mitigation for mainstem fisheries losses caused by the dams that constitute the Columbia River hydroelectric system.

Additionally, failure to fund maintenance of existing projects will lead to significant losses in recovery gained. This would occur mainly through livestock entering exclosure fences that are not maintained. Without maintenance cattle will enter these exclosures and rapidly destroy riparian vegetation that has been restored over the past 12 years. Accomplishment of maintenance activities by landowners would be variable.

c. Relationships to other projects

In Eastern Oregon the Mainstem, Middle Fork, and North Fork John Day River project (8402100), the Grande Ronde Habitat Enhancement project (8402500), the Umatilla Habitat Improvement project (871002), the Fifteen Mile Creek Habitat Improvement project (9304000), and the Trout Creek project (9404200) are closely tied. These projects use similar methods, focusing on watershed health and riparian and instream habitat enhancement within anadromous fish streams as a means of protecting and improving the quantity and quality of salmonid spawning and rearing habitat. The John Day, Grande Ronde, and Umatilla habitat projects communicate on a frequent basis, and regularly share equipment, funding, technology and personnel. For example, individual projects in the Camas Creek drainage (North Fork John Day subbasin) are funded under the John Day program, but implemented and maintained by Grande Ronde project personnel due to their geographic location. John Day and Grande Ronde personnel assisted the Umatilla project in 1996 with bioengineered treatments, receiving valuable training on use of "soft" structural applications in the process.

Specifically within the John Day Subbasin there are several projects that compliment this project. Examples include:

- This project complements beaver transplants, irrigation withdrawal and fish passage improvements made by the CTWSIR's John Day Watershed Restoration project (FWP No. 9137). The success of beaver transplants is enhanced within treated reaches due to healthier stands of riparian vegetation. Our leased/fenced areas protect irrigation improvement, fish passage and return flow structures implemented by this project.
- This project compliments riparian and fish habitat improvement efforts underway on surrounding US Forest Service and Bureau of Land Management property by assuring anadromous fish passage, continuing their restoration efforts further downstream and by giving refuge to fish stocks that must migrate downstream during winter ice periods.
- The local watershed councils, the Natural Resource Conservation Service, the Oregon Department of Forestry and the Oregon Department of Transportation depend on the project for restoration techniques and fence and instream habitat specifications.
- The Oregon Fish Screening Project (FWP # 9306600) protects downstream migrating smolts produced by the project. This project frequently shares personnel and equipment, exchanges information and exchanges locations of willing landowners with the screens project.
- The Army Corps of Engineers (COE) "Modification of Corps projects for the Benefit of the Environment" program under Section 1135 Authority is working on projects within the basin to restore or improve riparian and floodplain functions for the benefit of fish and wildlife.

Personnel from this project have been actively involved with the design and implementation of these Corps projects. The Environmental Protection Agency (EPA) and Oregon Department of Environmental Quality (DEQ) also contribute funding that address state or federal water quality standards in the basin.

- Local high school environmental education classes depend on the project for technical advice and access to stream property for monitoring sites.
- Another related agency program is the Columbia River Fisheries Development Program (the Mitchell Act) which provides funding to the Oregon Screens Program to protect downstream migrating fish.

d. Project history (for ongoing projects)

Project History: On July 1, 1984 the Bonneville Power Administration and the Oregon Department of Fish and Wildlife entered into an agreement (#84-21) to initiate fish habitat enhancement work on private lands within the Mainstem, Middle Fork and North Fork sub basins of the John Day River in Northeast Oregon. The primary goal of the project was to protect, access, create or restore riparian and instream habitat for anadromous salmonids, thereby enhancing opportunities for natural fish production within the basin. This project provided for implementation of program measure 703 (C) (1), Action Item 4.2 of the Northwest Power Planning Council's Columbia River Basin Fish and Wildlife Program (NPPC 1987) to rehabilitate instream aquatic and riparian habitats for spring chinook and summer steelhead production as off-site mitigation for fish losses due to the Columbia River hydroelectric system.

The project (new FWP # 8402100) is comprised of numerous smaller projects throughout the John Day River subbasin. Fifteen-year riparian leases are established with private landowners requiring considerable time developing rapport to gain acceptance of, and continued cooperation with, the program throughout the lease period.

The project has been proactive in public outreach, interagency coordination, technology transfer, education and as a resource for landowners and watershed councils. Private landowners have become more receptive to participating as the program has matured. As recovery progressed on early treatment areas the neighboring landowners became concerned about how their lands looked in comparison. A 1996 proposed Oregon ballot measure (Measure 38) sparked fears that in the future all streams would require fencing. Several landowners have decided to start making changes in consideration of a similar ballot measure surfacing in the future.

Activities of the project were coordinated with, and compliment fish habitat restoration projects on federal lands within the basin. Individual projects contribute to ecosystem and basin wide watershed restoration and management efforts underway by other groups and agencies. Procurement of additional funding and cost sharing for projects is ongoing with groups such as ODFW Fish Restoration and Enhancement, the John Day Acid Spill Fund, the Umatilla and Warm Springs Indian Reservations and the Federal Emergency Management Agency.

Major Results Achieved: Results include signing leases with thirty four landowners, protecting 66 miles of stream and 1,512 acres of riparian habitat, planting 7,450 riparian trees or shrubs, installing 3,040 instream habitat structures and installing three fish passage structures accessing 72 miles of stream.

We have objectively assessed each existing project based on its progress toward meeting our riparian restoration objective. We have defined the restoration objective as restoring riparian vegetation species diversity and community structure so the positive interaction of the stream,

riparian zone and floodplain perpetuate and maintain normative ecological and physical processes. The following categories were used for classifiying the projects: met objective, improvement towards objective, static, or degrading. Of the 37 projects, 8 have met the objective, 27 are improving, one is static, and one is degrading. We believe this validates our approach and documents that significant riparian habitat recovery is taking place.

Past Costs and Cost Sharing: This project has been in existence since 1984 (15 years). Project budgets have averaged ~$317,850 and ranged from a high of $406,481, to a low of $207,122. Prior to 1991 the program was 100% funded by BPA. Since then, this project has supplemented regular program funds with about $37,000 of outside funds (using Governor's Watershed Enhancement Board, Oregon Water Resources Department, Federal Emergency Management Act, ODFW Fish Restoration & Enhancement and private landowner funds). Beginning in 1996 and beyond our BPA contracts have provided for cost shares with private landowners on lower priority streams, whereby the landowners provide the construction and long term maintenance of these projects. In 1997 FEMA awarded this project $55,680 to repair damages to projects from the January 1997 flood event. However, FEMA requires a cost share of 25%, thus, funding dedicated to new implementation in 1997 went to O&M for flood repairs to cover the 3:1 match.

Adaptive Management:

- Upon initiation of the project in 1984 a variety of riparian enhancement strategies were considered. These included less restrictive lease terms, intensive pasture management, or intensive planting and/or use of instream structures alone. These techniques have been used by others but are often ineffective, or take much longer to produce recovery. Some agencies such as the Army Corps and NRCS typically require no monitoring of projects they fund or permit (NMFS 1997). The FWP calls for recovery of streams within 5 years, if possible (NPPC 1994). Based on our experience on Eastern Oregon streams, riparian exclosure fences, limited instream habitat placements and limited planting, has achieved the quickest recovery with the least amount of effort based on the cattle management strategies used in this area (Neal et al. 1996). In many cases this strategy fits best with the management most commonly used by cattle operators (Chaney et al. 1992). Using the most rapid method of recovery with a moderate level of maintenance and monitoring is essential.

- Our experience has also shown that different streams have different rates of recovery; many factors such as stream order, location of the stream, climate, condition of the upper watershed, and past management influence how quickly streams respond. For example, high elevation sites typically require much longer recovery periods than lower elevation areas because of extreme climate changes and shorter growing seasons. In nearly all cases there are no quick fixes to stream recovery.
- The use of active remediation techniques such as planting or use of instream structures alone at improving habitat is variable. In planning habitat improvement projects we have focused primarily on achieving proper floodplain function and establishing natural succession of riparian plant communities. Plantings and instream structures are installed on a case by case basis where they address specific limiting factors, or may be used in dysfunctional systems where historic floodplain function cannot be achieved (i.e. streams next to roads, residences, etc.). We believe that in most situations using riparian fencing alone, or combined with planting and/or bioengineering techniques using native materials, we can achieve better results than using traditional "hard" structure techniques such as rip rap, weirs, rock jetties, or barbs.

- We have used a wide variety of bioengineering and planting techniques since the program was initiated in 1984. For example, local and distant plant stocks, native and exotic plants, cuttings and rooted stocks, and use of root hormones have all been tried. Bioengineering and riparian planting success is largely dependent on donor plant selection and/or brood source, and our experience has shown that local indigenous stocks are most likely to succeed. Success is also increased when individual plants are placed in areas where these species occur naturally, therefore site selection is critical.
- As originally designed, riparian fences were thought to be relatively "maintenance free". Our experience has shown that a successful program is dependent on a project design that includes a consideration of geomorphology and hydrology of the stream (i.e. place the fence outside of the flood prone area), and a modest yet continuous level of maintenance. Both are vital to the overall success of the program. When making selections of individual projects, willingness of a landowner to fence greater distances away from flood prone areas weighs heavily in our decision of whether or not to implement a project.

Project Monitoring: A long term monitoring program has been in place that includes: Permanent thermographs established to monitor hourly stream temperatures at eight locations on four streams; collecting data from forty habitat monitoring transects on two streams; counting Chinook salmon and steelhead redds on three streams; neotropical songbird surveys on two streams and numerous physical or biological surveys that are coordinated with the ODFW fish district and area high schools.

Steelhead redd counts have risen from an average of 3.75 per mile in 1990 to 12.3 redds per mile in 1996 in one study stream. Chinook redd counts have risen from an average of 5.5 per mile in 1986 to 10.5 per mile in 1996 in another stream. Neotropical songbird counts on a third stream have risen from 20 species in 1986 to 40 species in 1996 (Neal et al. 1996).

Reporting: Results such as those listed above are reported regularly in quarterly, annual, or special reports and distributed to respective ODFW districts, BPA and other interested parties.

e. Proposal objectives

The goal of the John Day Fish Habitat Restoration Project is to increase natural production of wild spring chinook salmon and summer steelhead in the North Fork, Middle Fork, Mainstem and tributaries of the John Day river basin using habitat protection and enhancement measures. This is being accomplished under the Columbia River Basin Fish and Wildlife program, Measure 7.6, 7.7, 7.8 and 7.10. To accomplish this goal, work will progress in the following objectives and tasks:

Objective 1: Restore riparian vegetation species diversity and community structure so the positive interaction of the stream, riparian zone and floodplain perpetuate and maintain normative ecological and physical processes. Improve riparian habitat by constructing livestock exclusion fencing and planting native vegetation.

Task 1a: Prepare and obtain landowner lease agreements for FY 2000 work.

Task 1b: Walk streams to identify work areas, plan work, layout and mark specific sites where riparian fencing, offsite water developments and plantings will be implemented.

Task 1c: Develop construction schedules, engineer project specifications, advertise for construction bids, select contractors and obtain permits for implementation activities.

Task 1d: Purchase construction materials and supplies necessary to construct planned habitat improvements.

Task 1e: Construct 4.5 miles of fence on Long Creek, 13 miles of fence on Bear Creek to allow the restoration and protection of riparian vegetation.

Task 1f: Construct offsite water developments to remove livestock pressure from riparian fences and encourage livestock to use upland pastures.

Task 1g: Restore riparian vegetation by seeding grasses in areas disturbed during construction and planting native trees and shrubs where necessary.

Objective 2: Improve instream habitat diversity by constructing instream structures and placing large wood.

Task 2a: Prepare and obtain landowner lease agreements for FY 2000 work.

Task 2b: Survey/assess streams to identify work areas, plan work, layout and mark specific sites where bank stabilization and instream structures will be implemented.

Task 2c: Develop construction schedules, engineer project specifications, advertise for construction bids, select contractors and obtain permits for implementation activities.

Task 2d: Purchase construction materials and supplies necessary to construct planned habitat improvements.

Task 2e: Construct instream fish habitat and streambank stabilization structures determined during prework assessment on Long Creek and Bear Creek.

Objective 3: Maintain existing riparian exclosure fences, vegetative plantings, and instream structures to insure that project benefits persist along 66 stream miles of stream and 1512 acres of protected riparian habitat.

Task 3a: Inspect instream fish habitat structures on 66 miles of treated stream reaches. Assess maintenance needs following spring runoff and perform necessary repairs if funds are provided by BPA.

Task 3b: Inspect and maintain 132 miles of project riparian protection fences.

Task 3c: Inspect and maintain 157 project livestock watering devices. Maintenance shall include installation of all watergaps in the spring and removal of all watergaps in the fall.

Task 3d: Inspect and maintain 1512 acres of project vegetation plantings and seedings. Perform noxious weed control measures where necessary.

Task 3e: Inspect and maintain three fish passage structures before spring steelhead migrations.

Objective 4: Monitor and evaluate fish habitat improvement projects to determine if project goals and objectives are being met.

Task 4a: Take 181 photopoint pictures at selected sites and compare to previous years to document stream channel condition and riparian recovery.

Task 4b: Install eight thermographs to document stream temperature changes resulting from habitat treatment measures.

Task 4c: Measure stream cross section transects previously established at 20 sites on the Mainstem and 20 sites on Fox Creek and compare to previous years to document changes in stream width, depth and profile.

Task 4d: Count chinook redds on 12 miles of the Mainstem and steelhead redds on 3 miles of Fox Creek and 2 miles of Deer Creek. Compare counts to previous years to document anadromous fish population increases in these treated streams.

Task 4e: Count nesting species of neotropical songbirds and compare to previous years on one mile of the Mainstem and one mile of Fox Creek to document their use of recovering riparian vegetation.

Task 4f: Summarize, tabulate and graph data from photographs, thermographs, cross section transects, redd counts and songbird species counts. Evaluate results and prepare explanations of how habitat treatment measures have affected the results.

Objective 5: Coordinate with and educate landowners and agencies regarding project activities to gain maximum benefit.

Task 5a: Coordinate field activities with other agencies (i.e. USFS, NRCS, OWRD, DSL, GSWCD, CTUIR, CTWSIR), organizations (i.e. Nature Conservancy) and fish habitat programs to insure maximum technology transfer, program consistency and coordination of habitat enhancement efforts.

Task 5b: Make presentations to other agencies, private organizations, school /youth education groups and the news media to publicize project accomplishments.

Task 5c: Work cooperatively with private landowners to promote, and assist with, management activities beneficial to the protection and restoration of riparian areas and watersheds on their lands.

Task 5d: Prepare and distribute quarterly and annual reports of project construction, monitoring, coordination and education accomplishments.

f. Methods

The overall program objective is to increase natural production of wild anadromous salmonid populations by reducing sediment loading, improve water quality and quantity and improving riparian and instream habitat diversity.

Scope: This project addresses habitat degradation in the John Day subbasin by:

1) Implementing new projects through lease agreements with private landowners on selected streams.
2) Maintaining project investments throughout the life of the lease.
3) Monitoring and evaluating each project and applying adaptive management.
4) Coordinating project treatments and locations with other agencies, tribes and watershed councils.

Underlying Assumptions: Encouraging recovery of riparian vegetation, improving stream bank stability and instream habitat diversity will result in an overall increase in water quality and quantity within the John Day subbasin. These habitat improvements will result in an increase in salmonid carrying capacity within the system (Meehan 1991; Chaney et al. 1993).

Specific Tasks: In FY 1999 we will continue working cooperatively with landowners to protect riparian and instream habitat on selected streams. This will be accomplished through lease or cooperative agreements that restricts human use (i.e. eliminates grazing, road construction, timber harvest, mining, burning, etc.).

Two new projects are developed that were prioritized based on three watershed assessments (CTUIR 1984; Stuart et al 1987; OWRD 1992). The projects were chosen based on the fish species affected the quantity and quality of habitat they will enhance and their significance to the basin's watershed restoration goals. Implementation of these projects will follow the standard Planning Process and Prescriptions adopted in BPA's Record of Decision for the Watershed Management Program.

The first project involves fencing 2.1 miles of Long Creek to address the following fishery limiting factors: a poor riparian vegetation community, high summer water temperatures, excessive winter icing, excessive streambank erosion, excessive sedimentation, lack of large wood debris and lack of beaver. The target species for this project are spring chinook, summer steelhead and redband trout. The project reach lies within important spawning and rearing habitat for each of the target species. Project construction will be completed in one year and require $45,200. Fence will be constructed on both sides of the stream. Gaps will be left for watering of livestock and/or off-site watering developments will be constructed. Streambanks will be stabilized where necessary as determined by a site survey/assessment. Potential methods include: a) using bioengineering techniques, and b) installing large wood and boulders in stream channels. Riparian areas will be revegetated as determined by a site survey/assessments of the existing vegetative community. Potential methods include: seeding native grasses and legumes, planting native trees and shrubs, and controlling noxious weeds. Any man made impediments/barriers identified in the site survey/assessment will be modified or removed.

The second project involves fencing 6.3 miles of Bear Creek (a mainstem John Day tributary) to address the following fishery limiting factors: a poor riparian vegetation community, high summer water temperatures, excessive winter icing, excessive streambank erosion, excessive sedimentation, lack of large wood debris and lack of beaver. The target species for this project are spring chinook, summer steelhead and redband trout. The project reach lies within important spawning and rearing habitat for each of the target species. Project construction will be completed in one year and require $109,480. Fence will be constructed on both sides of the stream. Gaps will be left for watering of livestock and/or off-site watering developments will be constructed. Streambanks will be stabilized where necessary as determined by a site survey/assessment. Potential methods include: a) using bioengineering techniques, and b) installing large wood and boulders in stream channels. Riparian areas will be revegetated as determined by a site survey/assessments of the existing vegetative community. Potential methods

include: seeding native grasses and legumes, planting native trees and shrubs, and controlling noxious weeds. Any man made impediments/barriers identified in the site survey/assessment will be modified or removed.

Control of livestock utilization within riparian areas will be accomplished through: a) fencing riparian areas to exclude grazing and b) developing off-site water sources to encourage livestock to focus their attention away from riparian areas.

Project inspections and maintenance will be completed at least twice annually. Additional maintenance will occur following any catastrophic natural events (e.g. floods, wind storms, ice flows, etc.).

Monitoring and Evaluation: There are several ways in which individual projects are monitored and data evaluated. The project has been monitoring the following:

* Stream Temperatures: Eight thermographs have been installed at the upper and lower ends of selected project streams to measure long term changes in stream temperatures. These thermographs record water and in some cases air temperatures on an hourly basis. Data is graphed year to year to show changes in temperature profile.

* Habitat Monitoring Transects: These transect studies measure specific physical and biological characteristics (i.e. channel substrate, channel width, bank height, flow features, ground cover type, stream shading, etc.) in selected study areas. They are designed to measure long term changes in riparian vegetation and stream channel morphology. One hundred twenty habitat monitoring transects on two streams have been established within the John Day sub basin. Following establishment of these transects and the initial data collection, measurements have been retaken at 5 year intervals.

* Photopoints: Due to the size and complexity of the program, the easiest and least costly way to monitor results from individual projects is through photographic documentation. The purpose of these photographs is to show changes in riparian vegetation (such as increased canopy shading, improved stream bank stability, etc.), and changes in stream channel morphology (such as narrowing and deepening of the channel). Several photopoints are established on each individual project prior to implementation. Pictures are then retaken from most of these sites on an annual basis. In the John Day basin 181 photopoints have been established. Photographs and slides are used for presentations, as educational tools and duplicates are provided to landowners to demonstrate project benefits that have occurred on their respective properties.

* Other Biological Surveys: Spawning ground counts of salmon and steelhead, inventories of juvenile fish and nesting birds and growth rate measurements of woody plant species have been collected on selected streams.

The results of monitoring and evaluation efforts (M&E) have been included in quarterly, annual and other special reports, and are shared with other agencies or interested parties. M&E results have been used to formulate land use laws and policies discouraging riparian vegetation removal during land use activities performed under permit. Riparian fencing assistance programs for private landowners have been started by the Natural Resource Conservation Service, the

Governor's Watershed Enhancement Board, the Governor's Healthy Streams Partnership program, the ODFW Restoration and Enhancement Board, and the US Fish and Wildlife Service. These programs where begun, at least in part, because of the M&E results of this program. Information frequently shared by this program includes: Adult salmonid redd counts conducted throughout the basin; physical stream habitat surveys; aerial photographs and research information on salmonid life histories. This information is made available to respective ODFW fish districts, research groups, and other agencies or programs.

Results Expected: This project ensures that streams and associated native plant communities are allowed to evolve through their natural stages of succession. Important riparian plant communities such as cottonwood and aspen groves are protected from harvest or other human related damage. In general, near term changes (1-5 years) in the affected streams include: increases in grasses, forbes and shrubs; narrowing and deepening of the stream channel and improved overall habitat diversity. Long term changes (>5 years) include: increased shading from developing tree overstory, reduced summer temperatures; increased summer flows; reduced sedimentation; less bank erosion; increased instream and riparian habitat diversity; increased beaver populations; and reduced winter icing. Eventually, this will lead to climax plant communities with an over story of deciduous or coniferous tree species, accompanied by a mid and under story plant/shrub community. Increases in large woody debris input and associated pool habitat will occur naturally as late succession/climax plant communities develop (Meehan 1991).

Improvement of the quantity and quality of spawning and rearing habitat for spring Chinook, summer steelhead and resident fishes will result from this passive regeneration approach (Meehan 1991, Chaney et.al. 1993). We believe this project will provide multiple wildlife benefits as well, since approximately 75-80% of all wildlife species utilize riparian habitats for at least some portion of their life cycle.

We will continue to work cooperatively with landowners, tribes, other state and federal agencies, and provide educational opportunities to interested parties. However this project is able to more specifically address instream and riparian habitat issues on the ground because of our well established, long term, relationships with individual landowners. We are able to work much closer with landowners who shy away from multi-agency groups or "big government".

g. Facilities and equipment

The John Day Fish Habitat Project currently has the necessary personnel, office space, computers, tools, vehicles and equipment to continue with the planning, implementation, operation and maintenance of this project. The project is headquartered at the ODFW Fish Passage Facility in John Day, Oregon. The Bonneville Power Administration built this 6.5-acre facility in 1994 for $2,084,000.00. Office space, secretarial support, computers, shop facilities, storage and heavy equipment is shared with the Oregon Fish Screens Project (FWP # 9306600). Vehicles are provided by the Oregon State motor pool. Dry storage and fence materials storage is also provided by the facility.

The project has acquired fence construction equipment throughout the last 15 years including: All terrain vehicles for checking and mending fences, a tractor with post driver for constructing fences, a forklift for loading fence materials and two trailers for hauling fence materials.

Following is a list of equipment and facilities the project now has or has access to:

Facilities:

- Office Space	3000 sqft.
- Shop Space	16,000 sqft.
- Outdoor Storage	30,000 sqft.
- Dry Storage	1,800 sqft.

The Project pays 1/4 of the maintenance costs of the above facilities. Oregon Fish Screens Project (FWP #9306600) pays the remainder.

Equipment:

- 3 4WD Vehicles (leased)	- 4WD John Deer Tractor	- 2 Cameras
- 2 Computers	- 3 ATV's	- Wood Post Driver
- 2 Printers	- 8 Thermographs	- Power Auger
- 3 Chainsaws	- Typewriter	- Rock Drill

Other Equipment Available from the Screens Project:

- Cat 4WD Backhoe	- 2 Forklifts	- Milling Machine
- Steam Cleaner	- 2 Pipe Benders	- Drill Press
- Grinders	- 2 Power Hacksaws	- Overhead Crane
-2 16' Trailers	- Metal punching Machine	- Crane Truck
- Lathe	- Table Saw	-3 Welders

h. Budget

Personnel

This project has been criticized recently for the high costs associated with operations and maintenance. It should be clearly understood by the reviewers that the current format of the project was a requirement by BPA when the project was established. It was believed at the time that securing 15 year lease agreements controlling management activities within the riparian corridor and by providing most of the maintenance support of the improvements installed would be the most effective means of achieving improvements to fish habitat. This project currently holds 30 lease agreements of which ODFW, with BPA funding, will be responsible for most project maintenance. Failure to meet the obligations of these lease agreements would result in alienation of landowners that would quickly be communicated throughout the region. ODFW believes that it has an obligation to fulfill the terms of the lease agreements until they expire. Not only do we believe we have this obligation, but after developing projects with 93 landowners in northeastern Oregon we believe that the project format as originally developed has been an effective approach.

As the program matures landowners have observed the benefits of the completed projects, have become more responsive toward developing cooperative projects, and have shown greater interest in taking on the maintenance responsibilities of the project. Cooperation is the key to making significant habitat improvements on private lands. We are making constant progress in gaining increased landowner buy-in to our projects.

As a program we have observed many projects that have turned all the maintenance responsibilities to the landowner severely fail. Generally landowners enter into such a maintenance agreement with good intentions. However, the landowners highest priority is to

make a living. When push comes to shove the landowners operations take priority over that of the habitat project. A frequent result is that the habitat project (fences in particular) are not adequately maintained and the project fails. ODFW's top priority is improvement of fish habitat. We feel that the methodology of implementing we projects that we have used has been effective as cooperation gains momentum. We are now getting more commitment from landowners to do project maintenance. We will continue to seek increased commitment from landowners at a level "the market will bear".

We, as a program, have witnessed many projects, which have turned all maintenance responsibilities over to the landowners. Many of these projects have been complete failures. We commend project implementers who develop successful projects in which all maintenance is handled by the landowner. However, with the clientele in the geographic areas that we work, such a situation is the exception rather than the rule. In order to make significant habitat improvements that lead to increase production we need to treat relatively large portions of habitat.

We have investigated other ways of maintaining and implementing projects and find the current format the most effective. We have tried subcontracting fence maintenance and found it to be an ineffective method. We currently have project staff build short reaches of fence because we can do them for a lower cost, but we contract out most fence construction because on a larger scale contractors can do the job for less considering that we would have to hire more staff to complete all project duties.

We have refined designs of riparian exclosure fence over the past thirteen years and have a good understanding of how to fit different designs/styles into the most appropriate situations (geography, substrate, livestock characteristics, wildlife usage and landowner needs). High-tensile smooth wire fence is the style most commonly used, but barbed wire is also used in certain situations.

Fringe Benefits

Same as FY1999.

Supplies, materials, non-expendable property

Supplies include material for 17.5 miles of high tensile smooth wire fence, installation of associated solar powered off-site watering facilities, and to install site specific streambank stabilization and instream structures. Other costs are associated with maintaining existing fences and office equipment/supplies. There is no charge for office space.

Operations and maintenance

See discussion under Personnel

Travel

The project encompasses a large geographic area; daily travel distances average 90 miles. We believe it more cost effective to operate from one central location than to hire more personnel and develop an additional office in other parts of the subbasin.

Indirect Cost

The indirect rate increased in 1998 from 22.9 to 35.5. The rate increase reflects increased costs to administer the department's programs.

Subcontracts

Subcontract costs include construction of riparian fence and weed control. These cost estimates are based on thirteen years of implementing such work.

Section 9. Key personnel

SUMMARY OF KEY PERSONNEL:

NAME	TITLE	FTE/Hours
Timothy Bailey	Program Leader	Permanent, 2 months
Jeff Neal	Fisheries Habitat Biologist	Permanent, Full time
James Jerome	Fish Habitat Technician II	Permanent, Full time
Vacant	Fish Habitat Technician I	Seasonal, 9 months

Timothy D. Bailey
44986 Llama Lane
Pendleton, Oregon 97801
home (541) 278-1949
work (541) 276-2344

EDUCATION Bachelor of Science in Fisheries Science, 1986
Oregon State University, Corvallis, Oregon

PROFESSIONAL EXPERIENCE

July 1998 to Present **Acting Fish Habitat Program Leader**
Oregon Department of Fish & Wildlife, Pendleton, Oregon, 97801

Oversee the implementation of FWP funded anadromous fish habitat improvement projects in northeastern Oregon including the John Day, Grande Ronde and Umatilla subbasins. Also oversee FWP funded ODFW involvement in the Umatilla Fish Passage Operations Project. Specific duties include: tracking project expenditures; developing FWP project funding proposals; developing annual budgets and work statements; reviewing/approving proposed projects and landowner agreements; liaison with BPA COTR's; providing direction on overall program activities; and supervising four biologists, three technicians and three to seven seasonal employees. In addition, continue to accomplish some fish district activities as described below.

1993 to 1998 **District Fish Biologist**
Oregon Department of Fish & Wildlife, Pendleton, Oregon, 97801

District Fish Biologist for the Umatilla Fish District. I am Responsible for the management of fish resources in the Umatilla, Walla Walla (Oregon portion) and Willow Creek basins. Specific duties included: planning, implementing, and analysis of the inventory and census of fish populations and their habitats in standing and flowing waters; setting angling regulations to maximize recreational fisheries and conservation of wild fish populations; reviewing land use activities such as logging activities, water usage, stream alterations, pollution discharges into waterways and provide comments to the regulating agencies; develop and implement hatchery programs to bolster harvest opportunities and supplement natural production; develop various basin and waterbody fisheries management plans; review and comment on activities that occur on public lands (USFS, BLM, etc.); make presentations to the public and constituent groups regarding fish management activities; manage fisheries resources cooperatively with tribal co-managers; prepare reports on district activities; oversee/coordinate with programs operating in the district such as fish habitat improvement, passage operations, etc.; coordinate/educate local interests such as SWCD's, watershed councils and user groups on department/district activities; develop plans for and oversee the protection and enhancement of fish habitat; and provide supervision of two biologists.

1989 to 1993 **Fish Habitat Biologist**
Oregon Department of Fish & Wildlife, Pendleton, Oregon 97801

Project Leader for the Umatilla Basin Fish Habitat Enhancement Project. Management responsibilities included implementation, monitoring, and maintenance of individual fish habitat projects on private lands in Umatilla Basin streams. Specific duties included:

working with private landowners to develop and implement fish habitat projects in anadromous fish bearing streams; conducting stream habitat inventories; preparing riparian easements or leases and construction contracts for fish habitat projects; develop biological and physical monitoring and evaluation plans; provide program oversight and direction for collection, analysis and interpretation of data; inspect and assess project maintenance needs; provide technical assistance, make presentations and coordinate with various public agencies, private landowners and tribal agencies; prepare reports on program activities; develop and track program budgeting; and provide supervision of one permanent technician and one to two seasonal personnel.

1988 to 1989 **Fish Habitat Technician 2**
Oregon Department of Fish & Wildlife, La Grande and Pendleton, Oregon

Responsibilities as Fish Habitat Technician 2 were to implement, monitor, and evaluate fish habitat projects in the Grande Ronde and Umatilla river basins. Typical duties included: supervise and conduct the design and layout of instream fish habitat work and riparian fences; conduct biological and physical monitoring of fish habitat projects such as fish population surveys, stream habitat surveys, taking photopoints, collecting riparian and stream habitat transect data, monitor stream temperatures using thermographs; maintaining fish habitat instream structures and riparian fences; preparing reports, data summaries and tracking program expenditures; purchase and maintain equipment and supplies; and supervise one to two seasonal employees.

1986 to 1988 **Experimental Biology Aid**
Oregon Department of Fish & Wildlife, Various positions in LaGrande and Florence

Conducted spawning ground surveys of fall chinook and coho salmon on the central Oregon Coast for two seasons. Identified and counted chinook and coho salmon, collected scale samples from carcasses, measured carcasses and counted redds. Recorded and compiled data.
Worked in La Grande for the Grande Ronde Basin Anadromous Fish Habitat Enhancement Project for two summers. Completed fish habitat stream inventories and summarized data. Assisted with the construction of instream fish habitat structures. Supervises a crew constructing instream structures. Develop project maps from aerial photographs. Repaired and maintained vehicles and equipment.
Worked for the Lower Snake River Compensation Plan Monitoring and Evaluation Project in La Grande. Conducted summer steelhead creel census on the Wallowa and Imnaha rivers and assisted with pre-release sampling of juvenile spring chinook and summer steelhead. Entered spawning and liberation data onto computer files.

1986 **Fisheries Technician**
Parametrix, Inc., Bellevue, WA

Operated hydroacoustic sonar equipment used to monitor downstream smolt passage at Snake River hydroelectric dams. Duties included identifying fish traces on chart recorders, gathering and recording flow data, entering data into microcomputers, and deployment of hydroacoustic equipment.

SKILLS/INTERESTS:

Trained in hazmat response and natural resource damage assessment. Specialized training in fish habitat enhancement techniques and bioengineering. Interests include family, bowhunting with traditional equipment, angling and general outdoor recreation.

Jeff Neal
P.O. Box 515
West Highway 26
Patterson Bridge Road
John Day, OR 97845
(541) 575-0561

EDUCATION Bachelor of Science in Fisheries, 1981
Oregon State University, Corvallis, OR 97331

PROFESSIONAL EXPERIENCE

1988 to Present **Fish Habitat Biologist, John Day River Basin**
Oregon Department of Fish and Wildlife, John Day, OR 97845

Duties: Project Leader for the John Day Basin Fish Habitat Enhancement Project. Management responsibilities include implementation, monitoring, and maintenance of 34 individual fish habitat projects on private lands in John Day Basin streams. Specific duties include: working with private landowners to develop and implement fish habitat projects in anadromous fish bearing streams; conducting stream habitat inventories; preparing riparian easements or leases and construction contracts for fish habitat projects; develop biological and physical monitoring and evaluation plans; provide program oversight and direction for collection, analysis and interpretation of data; inspect and assess project maintenance needs; provide technical assistance, make presentations and coordinate with various public agencies, private landowners and tribal agencies; prepare reports on program activities; develop and track program budgeting; and provide supervision of one permanent technician and one seasonal technician.

1987 to 1988 **Fish Habitat Biologist, Umatilla River Basin**
Confederated Tribes of the Umatilla Indian Reservation, Pendleton, OR 97801

Duties: Implement, monitor, and evaluate fish habitat projects in the Umatilla River basin including: Supervise and conduct the design and layout of instream fish habitat work and riparian fences, conduct biological and physical monitoring of fish habitat projects using fish population surveys, stream habitat surveys, photopoint pictures and riparian and stream habitat transect data. Monitor stream temperatures using thermographs; Maintain fish habitat, instream structures and riparian fences; prepare reports, data summaries and track program expenditures; purchase and maintain equipment and supplies and supervise one to three seasonal employees.

1985 to 1987 **Fish Habitat Technician II, John Day River Basin**
Oregon Dept. of Fish and Wildlife, John Day, OR 97845

Duties: Assisted the biologist with aspects of project administration by: organizing and supervising seasonal employees; purchasing field equipment and supplies and completing proper documentation; determining materials needed for projects; and assisting with report writing and budgeting aspects. Implemented new projects by: assisting with design, layout and construction of new fences, watergaps and instream work projects; inspecting the work of contractors; and conduct plantings of native species within riparian areas. Assisted with project monitoring by: taking photopoint pictures; thermograph maintenance, deployment and data summarization & graphing; collecting habitat transect data; and conducting spawning surveys of spring Chinook and summer Steelhead. Maintained project areas and equipment by: inspecting and repairing fences, watergaps, and spring developments; maintaining vehicles and equipment; communicated with landowners frequently to continue ODFW/landowner rapport.

6/84 to 9/85 **Laborer 1, John Day Screens Program**
Oregon Dept. of Fish & Wildlife, John Day, OR 97845

Duties: Inventoried fish at various locations while checking fish screens. Collected scales and snouts of tagged salmon. Conducted redd counts on the John Day River. Constructed and installed fish ladders and screen boxes at various stream locations. Maintained vehicles and equipment.

1981 - 1984 **Biological Aide, John Day and Deschutes Basins.**
Oregon Department of Fish and Wildlife Research and Development, Corvallis, OR.

Duties: Perform aquatic stream inventories on assigned stream reaches, conduct summer Steelhead angling creel census and assist biologist with different types of biological sampling involving juvenile and adult salmonids.

SKILLS/INTERESTS:

Certified SCUBA diver, tree faller, CPR and First Aid. Member of the American Fisheries Society, Oregon Bowhunters and Ducks Unlimited.

Trained in HAZMAT response and natural resource damage assessment. Trained in fish habitat enhancement techniques and bioengineering.

Interests include camping, fishing, hunting and target archery.

James Jerome
P.O. Box 515
West Highway 26
Patterson Bridge Road
John Day, OR 97845
(541) 575-0561

EDUCATION Associates of Science Degree in Fisheries Technology, 1973
Mount Hood Community College, Gresham, OR 97331

PROFESSIONAL EXPERIENCE

1991 to Present **Fish Habitat Technician II, John Day River Basin**
Oregon Dept. of Fish and Wildlife, John Day, OR 97845

Duties: Assisted the biologist with aspects of project administration by: organizing and supervising seasonal employees; purchasing field equipment and supplies and completing proper documentation; determining materials needed for projects; and assisting with report writing and budgeting aspects. Implemented new projects by: assisting with design, layout and construction of new fences, watergaps and instream work projects; inspecting the work of contractors; and conduct plantings of native species within riparian areas. Assisted with project monitoring by: taking photopoint pictures; thermograph maintenance, deployment and data summarization & graphing; collecting habitat transect data; and conducting spawning surveys of spring Chinook and summer Steelhead. Maintained project areas and equipment by: inspecting and repairing fences, watergaps, and spring developments; maintaining vehicles and equipment; communicated with landowners frequently to continue ODFW/landowner rapport.

1983 to 1991 **Fish Hatcheryman**
Oregon Department of Fish and Wildlife, Cascade Salmon Hatchery, Cascade Locks, OR 97014

Duties: Spawned fall chinook, coho and winter steelhead. Fed fish, cleaned ponds, treated fish diseases, maintained hatchery grounds and equipment. Kept all records of fish numbers, pounds produced and food converted. Cross trained with the Fivemile and Trout Creek fish habitat projects where I repaired and maintained riparian fences, removed debris from watergaps, changed batteries on electric portions of fence and coordinated with landowners for accessing fence project sites and irrigation screen sites.

SKILLS/INTERESTS:

Certified SCUBA diver, CPR and First Aid. Member of the American Fisheries Society, Veterans of Foreign Wars, Vietnam Security Police Association.

Trained in HAZMAT response and natural resource damage assessment. Trained in fish habitat enhancement techniques and bioengineering.

Interests include camping, fishing, hiking and hunting.

Section 10. Information/technology transfer

The project has signed cooperative agreements with four agencies, 34 landowners, the Confederated tribes of the Umatilla and Warm springs Indian Reservations and three area high schools that specifically list information and technology transfer as a requirement. The information is delivered through quarterly and annual reports and on a site-specific basis through technical advice.

All interagency (US Forest Service, Bureau of Land Management) information and technology transfer is coordinated through the John Day Fish Habitat Implementation Plan (Stuart et. al. 1985), presentations/poster sessions at professional society meetings and on site specific tours. Non-agency cooperative agreements are signed with the Grant County Soil and Water Conservation District and the North Fork John Day Watershed Council.

Intraagency technology transfer occurs between the ODFW Grande Ronde (FWP # 8402500), Umatilla (FWP # 8710002), Trout Creek (FWP # 9404200) and Fifteenmile (FWP # 9304000) Fish Habitat Improvement Projects through yearly meetings, tours and quarterly and annual reports.

Reports and data summaries (such as stream temperatures, fish or habitat surveys, before/after photopoint pictures) are distributed to a large number of individuals and agencies including the USFS, BLM, DEQ, DSL, landowners and the tribes.

Signs are placed in visible locations on all projects identifying them as cooperative efforts between agencies and private landowners. News articles are occasionally written. Photopoint pictures are frequently exhibited at county fairs, and Boy Scout and sportsmen's meetings.

The results of monitoring and evaluation (M&E) efforts have been included in quarterly, annual and other special reports, and are shared with other agencies or interested parties. M&E results have been used to formulate land use laws and policies discouraging riparian vegetation removal during land use activities performed under permit. Riparian fencing assistance programs for private landowners have been started by the Natural Resource Conservation Service, the Governor's Watershed Enhancement Board, the Governor's Healthy Streams Partnership program, the ODFW Restoration and Enhancement Board, and the US Fish and Wildlife Service. These programs where begun, at least in part, because of the M&E results of this program. Information frequently shared by this program includes: Adult salmonid redd counts conducted throughout the basin, physical stream habitat surveys, aerial photographs and research information on salmonid life histories. This information is made available to respective ODFW fish districts, research groups, and other agencies or programs.

Congratulations!